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LIVING STOCK COLLECTIONS

Program Announcement

TARGET DATE: ***FIRST TUESDAY IN JULY***

DIVISION OF BIOLOGICAL INFRASTRUCTURE

DIRECTORATE FOR BIOLOGICAL SCIENCES

NATIONAL SCIENCE FOUNDATION

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DIRECTORATE FOR BIOLOGICAL SCIENCES

Division of Biological Infrastructure

INTRODUCTION

Since the 1970s, the National Science Foundation (NSF) has supported the operation and improvement of outstanding collections of living organisms through the Living Stock Collections (LSC) Program and its predecessors. Such collections have played a key role in the advancement and preservation of knowledge by providing well-characterized and documented experimental organisms to U.S. and foreign researchers at modest charge.

The Living Stock Collections Program is administered by the Division of Biological Infrastructure to strengthen infrastructure critical to the conduct of basic research in areas within the purview of the Directorate of Biological Sciences (BIO). Thus, requests for support by the Program are expected to describe stock collection activities that emphasize maintenance and provision of organisms needed for basic research in the biological sciences. In addition to the collected organisms, biological reagents relevant to their study (such as isolated DNAs and libraries of DNAs, antibodies, etc.) may be included in the collection when appropriate. Collections supported on a longer term basis by the LSC Program are expected to develop and make available an electronic database listing the contents of the collection as a means to facilitate public access to the collection.

In addition to requests for long-term support of basic collection activities, the LSC Program accepts requests for short-term support for the development of innovative approaches to handling living stocks and for one-time improvements in operations of established collections, including collections not otherwise supported by the LSC Program. Requests for short-term funding to move valuable established collections to a new institutional home are also considered. In general, such requests must include an explicit plan to incorporate the collection into another collection. The LSC Program does not expect to renew awards for these short-term projects.

PROGRAM GOALS

The goal of the LSC Program is to support the operation and improvement of collections of living organisms used actively and widely in biological research. Thus, the LSC Program does not provide ongoing support for collections that are primarily archival or otherwise intended to document biodiversity. While the Program encourages the incorporation of biological reagents into collections, it does not provide significant direct support for the development of such reagents. Similarly, the Program does not provide funds to conduct research beyond normal and appropriate curatorial efforts. Support for development of biological reagents or for original research by collection staff should be sought from appropriate research programs at the NSF and at other public and private agencies. In identifying requests that deserve highest priority for funding, the Program will consider the following general characteristics:

- The importance of the collected species or species group in basic biological research. This could reflect, for example, the utility of the organism as a "model system" following years of concerted research effort by many investigators.

- The uniqueness of the collection, both within and outside the US.

- The breadth of usage of the collection by the potential user community. Both the types of use and numbers of users reflect the worth of the collection to the research community.

- The relevance of the collection's usage to the goals of the Directorate for Biological Sciences. Thus, collections of organisms whose principal uses are in research directed at understanding the origins or treatment of disease are outside the purview of this Program.

- The active involvement of a scientifically-qualified collection manager with expertise in the collected organism.

- The location of the collection in an active research environment.

- The availability of all relevant information about the collection in an electronic database accessible to potential users of the collection via the internet.

- The participation of an active external advisory group whose membership includes current or potential users. Such groups play an important role in advising the collection on matters of policy and practice including, for example, user fees and acquisition policies.

Potential applicants are strongly encouraged to contact the LSC Program Director before beginning the effort of preparing a proposal. Potential applicants are also encouraged to seek support from other appropriate public and private sources of funding. **Support by other sources will be considered a positive attribute of a collection seeking support from the LSC Program.**

PROPOSAL FORMAT

The proposal should be presented clearly, concisely and completely. In preparing the proposal, follow the general guidelines contained in the most recent version of the NSF publication "Grant Proposal Guide" (GPG; NSF 95-27), and the specific guidelines outlined below. Copies of the GPG are available at no cost from the NSF Forms and Publications Unit either by phone at (703) 306-1130 or electronically (*pubs@nsf.gov)*, or may be downloaded directly from the NSF homepage (http://*www.nsf.gov/bfa/cpo/gpg/start.htm).* All forms can be found in GPG and on the NSF homepage. Each proposal must contain the sections mentioned below in the order indicated.

A. Cover Page. The most recent version of NSF Form 1207 must be used.

B. Table of Contents. NSF Form 1359 may be used.

C. Project Summary. The summary should briefly summarize the importance of the collection and of the proposed project in a self-contained document, understandable to a scientifically literate reader. This section may not exceed 200 words in length. NSF Form 1358 may be used.

D. Prior Support Statement. Briefly describe the outcome of any NSF support received by the Principal Investigator (PI) in the last five years and list all publications that resulted. If this is a renewal proposal, state the title, amount of funds received and duration of the award for which renewal is sought. Describe any accomplishments that are not included in the narrative section. If

the PI(s) received NSF research support concomitantly, briefly describe the outcome of that research and list all publications resulting from it. This section is limited to *two pages per project* and to five pages overall, inclusive of references.

E. Narrative. This section describes the project in detail and is limited to 15 pages except as noted below for long-term projects.

- ***For short-term projects aimed at improving the methodology or technology of stock collection operations***, the presentation should be consistent with that in a research proposal, including specific aims and sufficient technical detail to assess the likely success of the project and the expected impact on operation of stock collections.

- ***For other short-term projects, including collection relocation,*** present sufficient detail to assess the need for the activity and the likely outcome if an award is not made. The content of short-term requests should emphasize topics in items 1 through 7 and 10 in the following guidelines for the narratives of long term projects. Information relevant to other items is helpful; however, the suggested extensive detail, especially for usage (*items 8 and 9)* and cost analysis (*item 11*), is not required.

- ***For long-term projects***, the narrative section should describe the current and future operation of the collection in detail. *Required lists and tables should be presented in a separate section at the end of the proposal (see section J, below).* The narrative and permitted appendices should include the following information.

1. Historical perspective and statement of goals. This introductory section should describe origins of the collection and the goals of its operation. It should also identify the areas of research that benefit from use of the collected organisms.

2. Description of the collection. Provide a general summary description, including number of stocks and, where appropriate, number of mutant strains, species, genera, etc. If desired, a printed catalogue or detailed list may be attached as Appendix 4 (see section J, below). Applicants planning to include a list longer than 10 pages must consult the LSC Program Director before submitting the proposal.

3. *Management structure*. Describe the roles, qualifications and responsibilities of the collection's Director, the collection manager and any other key personnel. NSF expects that the collection manager will have a Ph.D. or equivalent research experience. Identify the academic department or other organizational unit in which the collection is located and the institutional official(s) to whom the Director of the collection reports. If extensive, this may be provided as a diagram.

4. Acquisition policy. Describe the policies for adding and removing stocks and how these reflect the statement of goals in item 1. Estimate the number of stocks added to, or removed from, the collection in each of the last three years. Indicate the number of duplicate or unidentified stocks at the current time. Justify the presence of any duplicates, and describe plans to identify any unknown stocks.

5. Relationship to similar collections. Identify other national or foreign collections of the same organism(s), if any, and estimate

overlap in collection contents.

6. Documentation and ordering. Describe the use of electronic databases in operation of the collection and in provision of public access to information about the collection, including the frequency with which such public information is updated. Describe the ordering procedure and any relevant plans to inform the scientific community of the availability of the resource. Provide the internet address of the collection and indicate the fraction of orders received by World Wide Web-based forms, other electronic means, phone and mail in each of the last three years.

7. Quality control practices. Describe procedures and practices intended to assure integrity of the individual stocks and other resources, and any steps to assess the quality of service provided to the community.

8. Use of the collection. Wherever possible, use tabular formats that can be updated in yearly progress reports.

- List services and categories of products available to users. List fees including any user fees associated with individual services or products.

- Provide a summary table (Table 1) describing institutional usage of the collection (numbers of orders and of stocks sent to U.S. and foreign institutions; kinds of institutions - academic or non-profit research institutions, industrial, or governmental, internal *versus* external users, educational *versus* research, if known, etc.) on an annual basis for the past five years.

- Provide a summary table (Table 2) describing individual usage over the same periods used for Table 1. Indicate the total number of users, total number of orders, total number of stocks sent, and total user fees collected. Indicate mean values of orders, stocks and fees on a per user basis. Provide individual data for top 25 users of the collection in the last two annual periods, including number of orders and of stocks provided to each. If possible, combine usage by a single research group or laboratory. In providing this list, do not use actual names; instead assign a number or other identifier (e.g., "user A" or "group A"), using the same identifier for each user or group from year to year. Each user's country (U.S., etc.) should be indicated.

9. *Other productive use of the collection*. For example, provide a list of researchers visiting the facility in the last five years with purpose of visits, institutional affiliation and duration of stay; source of funding, and a selected list of publications resulting from research based on the collection.

10. Future goals. Describe any expected changes in the scope of the collection, in its manner of operation, in staffing, or in facilities. Describe short and long term plans for the collection in the event of unanticipated changes in ability of the key personnel to participate.

11. Cost analysis. Estimate the staff time and other costs (*pro rata* cost of glassware, growth media, cage charges, etc.) required for accession and for yearly maintenance of a typical stock. Provide a figure or table showing the fractions of the annual cost of operation of the collection currently provided by: 1) NSF; 2) other Federal agencies; 3) institutional contributions; 4) user charges; and, 5) other sources, such as private foundations, endowments, and personal contributions. Estimate the expected change,

if any, in this total cost of operation over the period for which funding is requested. ***Applicants should anticipate that the fraction of total cost borne by NSF will decrease over time, and that the actual amount of direct NSF support may itself decrease.***

12. User charges. Provide a current list of all user fees and the date on which these were last changed. Describe the accounting basis for establishment of fees and the methods of return of fees to offset operational costs of the collection. ***Collections with long-term LSC support are expected to recover a significant fraction of their total cost of operation through user fees. The cost of providing services and products other than living organisms should be largely supported through such fees or through funding by sources other than the LSC Program.***

13. Advisory group. All collections supported on a long-term basis are expected to have an external advisory group that meets annually to provide guidance to the collection's Director and host institution on collection operations and policies such as user fees and acquisitions. The group should also serve as a resource for user community input into assessment of the quality of services and products and identification of future needs by the collection's Director and host institution. This section should include an outline of the functions of the group and the mechanisms for assuring that the group will broadly represent the research community that uses the collection by, for example, including members that were nominated by appropriate professional societies interested in operation of the collection. The group is expected to prepare a written report and provide this to the collection's Director following its annual meeting. The PI should include a summary of the group's activities as part of the collection's annual report to NSF. A list of current membership of any existing advisory group should be presented in Appendix 1 *(see Section J, below)*.

14. Facilities. Briefly describe laboratory and office space, equipment, growth facilities, etc.

15. Institutional role. Describe the host institution's long term plans for maintaining the collection, including a view to the future beyond the period of requested support. Include a financial projection of support from all sources for the first year of operations following termination of the NSF support being requested.

F. Budget and Budget Justification. The proposal may request refurbishment or special operational support of the collection for up to five years. Using NSF Form 1030, provide a separate budget for each year of requested support and a separate cumulative budget for all years. Explain and justify the need for funds in each budget element. The following costs will be considered allowable under the terms of the grant:

1. Technical assistance (non-research).
2. Limited administrative assistance.
3. Equipment. (Small, durable items ordered in bulk (e.g., animal cages) should be listed as equipment for this program only, and are not subject to indirect costs.)
4. Materials and supplies.
5. Publication of stock lists.
6. Development and maintenance of electronic databases.
7. Minor renovations (long-term projects).
8. Support of advisory group meetings. List as participant support. No honoraria may be provided from NSF funds.

9. Travel . Include only travel directly related to collection activities. In general, support for travel to scientific meetings is not provided on long-term awards unless justified as necessary for the collection's operation.
10. Indirect costs.

In general, funds will not be provided for items that would normally be part of an individual research grant (such as salaries of investigators or research assistants, supplies for research or special equipment for particular research projects).

G. Other support. Describe financial commitments to the proposed project by the host institution and other sources in the tangible form of matching funds or cost contributions. Although not mandatory, these will strengthen a proposal. Appropriate documentation should be provided in Appendix 2 (see below).

H. Curriculum Vitae. Provide a biographical sketch for the PI(s) and other key personnel using content guidelines in the GPG (limited to 2 pages per person). NSF Form 1362 may be used, but is not required.

I. Current and Pending Support. Include a separate form for each PI. Use NSF Form 1239.

J. Special Information.

- *Appendix 1*: Provide required and optional lists, figures and tables for long-term projects as described in narrative items 8, 9, 11, 12 and 13. Lists, tables and figures should be numbered and titled, and should be identified individually in the Table of Contents.

- *Appendix 2*: As appropriate, provide letters documenting agreement to collaborate and any institutional commitments of cost sharing or other contributions. **Letters of endorsement may not be included**.

- *Appendix 3*: Provide a statement assuring that all pertinent regulations will be followed in receiving and sending the living stocks. All perishable biological materials must be shipped in compliance with postal regulations. Where etiologic agents are involved, the Public Health Service regulations govern their transportation. For endangered species, those of the Endangered Species Act of 1973 and the Convention on International Trade in Endangered Species of Wild Fauna and Flora must be followed. For plant pests, the USDA Animal and Plant Health Inspection Service's regulations governing their transportation must be followed. For genetically engineered organisms, all pertinent permits must be obtained from appropriate agencies. Where vertebrate animals are involved, include the approval of your animal facilities and your proposal by your institution's animal welfare committee. Also provide a statement that the institution has an approved Animal Welfare assurance on file with the U.S. Public Health Service. If your institution does not yet have such a committee, contact NSF for guidance.

- *Appendix 4*: If desired, place a stock list here (*optional; see narrative item 2*).

K. Other information. A single copy of NSF Form 1225 completed by the Principal Investigator(s) must be attached to the signature copy of the proposal.

PROPOSAL SUBMISSION

The target date for all proposals is the first Tuesday in July, for possible start of funding at the end of the following January. Fifteen copies of the proposal should be mailed to:

Proposal Processing Unit - Room P60
Attention: Living Stock Collections Program
Division of Biological Infrastructure
National Science Foundation
4201 Wilson Boulevard
Arlington, VA 22230

One copy must be signed by the proper authorizing officials of the sponsoring institution and all Principal Investigators. The completed Form 1225 should be attached to this copy.

PROPOSAL REVIEW

Proposals will be evaluated by a combination of *ad hoc* and panel review using the standard NSF review criteria as discussed in the GPG. Emphasis is placed on the expected impact of funding in the context of the LSC Program Goals, as discussed above. Reviewers are asked to consider the feasibility of a project's aims and, particularly in the case of requests for long-term support, the importance of the collected organism for basic biological research; the collection's size, quality and uniqueness; its research utilization by the scientific community and host institution; its national importance; the long-term commitment of the host institution to the collection's maintenance; and the extent of support by institutional and other sources of funding, including user fees.

Applicants may suggest knowledgeable reviewers by letter sent directly to the Program Director. Please avoid suggesting individuals who will have a conflict of interest in reviewing the proposal, such as current or recent collaborators of the collection's staff, including members of any advisory group.

A minimum of six months should be allowed between submission of the proposal and the requested effective date of the grant.

AWARD ADMINISTRATION AND OVERSIGHT

Depending on availability of funds and advice of reviewers, awards for short-term projects will be made grants of 12 to 36 months in duration, and awards for long-term projects will be made as grants of up to 60 months in duration. Awards for short-term projects are generally in the range of $20,000 to $100,000 (total) while those for long-term projects are generally in the range of $80,000 to $500,000 per year. In recent years, the LSC program's annual budget has been about $3.5 million, and the program has supported 3 to 5 short-term projects and 18-20 long-term projects.

All NSF grantees must submit an annual report describing progress. ***Progress reports for long-term awards must include updated lists and tabular information as presented in Appendix 1 of the original proposal. Summaries of the most recent advisory group activities and the response of the collection's Director to external advice, if any, must also be included.*** At its option, the Program may seek external advice in carrying out its oversight responsibility including, as appropriate, the use of site visits and panel review.

Awards made as a result of this document are administered in accordance with the terms and conditions of NSF GC-1, "Grant General Conditions", FDP-III "Federal Demonstration

Partnership General Terms and Conditions". Copies of these documents are available at no cost from the NSF Forms and Publications Unit either by phone at (703) 306-1130 or electronically (*pubs@nsf.gov)*. More comprehensive information is contained in the NSF Grant Policy Manual (NSF 95-26) for sale through the Superintendent of Documents, Government Printing Office (GPO), Washington, DC, 20402., or available on the Foundation's World Wide Web home page (*http://www.nsf.gov)*. The phone number at GPO is (202) 783-3238 for subscription information.

RENEWAL

In general, short-term support is provided for projects with well-defined aims that can be accomplished within the period of the award. Thus, renewal of support should not be expected. Long-term awards are for projects that, by their nature, are expected to continue for an indefinite time. Requests for renewal of support of such projects are anticipated. While the level of accomplishment during the previous award will be considered in establishing the merit of a renewal request, previous support by NSF will not itself be considered a positive or negative attribute of the renewal proposal.

For more information, contact

Program Director for Living Stock Collections
Division of Biological Infrastructure, Room 615
National Science Foundation
4201 Wilson Boulevard, Arlington, VA 22230
Phone: (703) 306-1470

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Web Site at:

http://www.nsf.gov

- **Location:** 4201 Wilson Blvd. Arlington, VA 22230
- **For General Information (NSF Information Center):** (703) 292-5111
- **TDD (for the hearing-impaired)** (703) 292-5090 or (800) 281-8749
- **To Order Publications or Forms:**

  Send an e-mail to: pubs@nsf.gov

  or telephone: (703) 292-7827
- **To Locate NSF Employees:** (703) 292-5111

The Foundation provides awards for research in the sciences and engineering. The awardee is wholly responsible for the conduct of such research and preparation of the results for publication. The Foundation, therefore, does not assume responsibility for the research findings or their interpretation.

The Foundation welcomes proposals from all qualified scientists and engineers and strongly encourages women, minorities, and persons with disabilities to compete fully in any of the research related programs described here. In accordance with federal statutes, regulations, and NSF policies, no person on grounds of race, color, age, sex, national origin, or disability shall be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving financial assistance from the National Science Foundation.

Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF projects. See the program announcement or contact the program coordinator at (703) 306-1636.

Privacy Act and Public Burden. The information requested on proposal forms is solicited under the authority of the National Science Foundation Act of 1950, as amended. It will be used in connection with the selection of qualified proposals and may be disclosed to qualified reviewers and staff assistants as part of the review process; to applicant institutions/grantees; to provide or obtain data regarding the application review process, award decisions, or the administration of awards; to government contractors, experts, volunteers, and researchers as necessary to complete assigned work; and to other government agencies in order to coordinate programs. See Systems of Records, NSF 50, "Principal Investigators/Proposal File and Associated Records", 60 Federal Register 4449 (January 23, 1995), and NSF-51, "Reviewer/Proposal File and Associated Records", 59 Federal Register 8031 (February 17, 1994). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of your receiving an award.

Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Herman G. Fleming, Reports Clearance Officer, Contracts, Policy, and Oversight, National Science Foundation, 4201 Wilson Boulevard, Arlington, VA 22230.

The National Science Foundation has TDD (Telephonic Device for the Deaf) capability, which enables individuals with hearing impairment to communicate with the Foundation about NSF programs, employment, or general information. To access NSF TDD, dial (703) 306-0090 or (800) 281-8749]. for FIRS, 1-800-877-8339.

The program described in this announcement is in category 47.051 of the Catalog of Federal Domestic Assistance.

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